Castlemaine Naturalist

April 2016

Vol. 41.3 #441

Monthly newsletter of the Castlemaine Field Naturalists Club Inc.

Koala at Strangways - photo by Noel Young

The founder of modern geology

Noel Young

In 2001 Simon Winchester, perhaps better known for 'The Surgeon of Crowthorne' and other books, published 'The Map that changed the world', a biography of a man who seemed to have been forgotten in history, but whose singular dedication and determination against considerable odds led to the founding of modern geology as a science.

And yet his very name is somewhat mundane – if you told a policeman your name was William Smith he would think you were lying. Perhaps that and his relatively humble origins as the son of a blacksmith led to snobbish resistance to his proper recognition by the Royal Society during his active years, although eventually he did receive due accolades.

Smith was born in 1769 when Britain was undergoing radical transformations. On the one hand an agricultural revolution beginning with widespread enclosures of the commons led to better diet, hence better health, hence an increasing population. On the other the rapid development of what we now call the industrial revolution - James Watt patented his condensing steam engine, and Arkwright his cotton spinning frame in the same year Smith arrived in the world.

It was also a time when education of those other than the well healed was becoming common with the availability of books, and enlightenment questions were being asked that challenged the almost universal view that the world was created in 4004 BC. However, this view tended to prevail until Darwin put paid to it in 1859 with biological evidence of evolution, but the questions being asked much earlier about the age of the earth were based on geology (which Darwin also took into account in his “Origin of Species”). A spirit of enquiry was abroad in the latter stages of the

eighteenth century. It was the time of John Wilkes, Edmund Burke and Thomas Paine ('The Age of Reason')

The 'natural philosophy' known as Geology had more or less begun as an inquiry into “the nature of the earth before and after the deluge”. Early geologists were little more than collectors of 'sports of nature' or 'figured stones' as fossils were generally known, and aristocrats in particular had large collections of them. The puzzle was that though they closely resembled the remains of living creatures, they appeared to be formed of stone. They could not possibly have been living things, especially as many could be found at the top of mountains! A compromise sought by some was the simplistic notion that the Noachian Flood could have deposited the remains of actual marine creatures. The nuances of this debate and the development of evidence based thought at the time is dealt with in fascinating detail by Winchester.

At the same time the beginnings of the industrial revolution and the production of iron had created an increased demand for coal, and a cheaper means of transporting it from mines to the industrial centres. The answer was a network of canals which became the means of mass transport until the railways superseded them in the late nineteenth century.

Smith was a surveyor involved in plotting the course of least resistance of canals through the countryside. At the age of 18 he had met and impressed a surveyor and became his assistant. As there was great demand for surveying at the time, he soon gained proficiency and was able to carry out the work independently. His fondness for travel seemed to begin with the necessity for it that his profession availed.

But fortuitously, for a time he was employed in the Mearns colliery in Somerset, where he learned from local miners the importance of the strata in locating seams, and mapping the strata in several vertical shafts he came to realise some very important principles of sedimentary geology such as the reliability of continuity of sequences from one place to another. Notably, he deduced that the repetitive sequences were distinguishable by fossil beds, and these were the key to establishing the sequence several miles away. The thickness of the individual beds may be different, but the order of the beds would always be the same. Smith was well capable of mapping the two dimensional surface, and he realised that he could extend this to mapping in three dimensions to reveal the subsurface over extensive areas, and that doing this could assist in the search for new coal seams. He became keen to test the principles on a wider canvas.

There were dozens of coal mines in Somerset, and because of competition from Wales, it was decided that a canal was needed, and Smith to his great joy was chosen to survey the route. He had by now a hidden

agenda: he wished to see whether the cuttings for the canal would reveal strata that he could trace in the manner of the coal measures he was familiar with.

Smith spent seven seminal years working for the Somerset Coal Canal Company. Gently east-dipping strata meant that the canal would traverse from what we now call the Upper Carboniferous coal measures through Triassic and Jurassic beds in succession as the canal progressed eastward to join the Avon south-east of Bath.

The cuttings associated with his work were something of a revelation to his fertile mind. Dipping strata formed a neat cross section of the sub surface, and he noted that the progression from the lower to upper beds was accompanied by significant though progressive changes in the fossils. There were puzzles where strata were different from one place to another, but by an extensive and careful collection of fossil sets, Smith came to be the first to realise that matching them was more important than the rock type – identical fossils could be used to match strata over great distances.

Then he had a sponsored trip around the country as far as York to check on other canals, and he used it to confirm that the stratigraphic principles he had learnt could be applied on a grander scale. Realising that his theories of strata were valid, he penned a note which still survives. It was 1796 when he wrote “Fossils have long been studied as great curiosities, collected with great pains, treasured with great care and at a great expense, and showed and admired with as much pleasure as a child's rattle or a hobby-horse …. by thousands who have never paid the least regard to that wonderful order and regularity with which nature has disposed of these singular productions, and assigned to each class its particular stratum.”

William Smith rose to some prominence while living in Bath, and became more determined to make a map in three dimensions of as much of the countryside as he could. The technology of map making was another challenge, as he determined that the best way to distinguish strata was the use of colour. In 1799 he hand coloured a base map to depict the geology around Bath – recognised now as the oldest of all true geological maps, and held by the Geological Society of London. He also produced a table of strata of the area, copies of which were widely distributed.

Around this time Smith lost his job with the canal company and had to adopt a more perilous life as a consultant which had the advantage of taking him all over the country, but which plunged him into a financial crisis which eventually ended in a stretch in a debtors prison. But over the early years of the nineteenth century when Jane Austen was publishing her tales of romance amongst the aristocracy, Smith was pounding hundreds of

miles across the English countryside alone with his notebooks and clinometer, compiling a huge amount of information which would form the basis of the first large scale geological map in the world, covering England and Wales, and part of Scotland.

Finally published in 1815, the revolutionary map still hangs on a wall at the headquarters of the Royal Society in London. A photo of it is shown in the book alongside a modern geological map of Great Britain, and the outline of the major divisions is almost the same. Although there was a media blitz to celebrate 150 years since the publication of Darwin's Origin of Species, I am not aware of any mention last year of the 200 years since William Smith's triumph, despite Simon Winchester having drawn attention to him with his wonderful tribute*. Strange how selective we are about our celebrities.

*A must read – there is far more to the story than the sketchy outline above. Simon Winchester; THE MAP THAT CHANGED THE WORLD Viking 2001

Bird and Plant Quiz

We have decided to put two new sections in the Newsletter each month. One will be a picture of a local bird species and the other a local plant. The idea is to give you some time to think about what they might be. There are no prizes, just a time for you to rack your brains. In the next issue of the Newsletter, we will give the answers, together with some comments about the bird and the plant. In this way we hope to provide more information on birds to the plant specialists and more information on plants to the birders. Please feel free to respond to the editor with either corrections or further information. - Nigel Harland

Here is the first bird for you to think about:

Some extracts from the report that Hans van Gemert has submitted to the committee. Hans attended the meeting with VicRoads as the club representative

Report on Vicroads Pyrenees highway tree removal

Hans van Gemert

Background

VicRoads claim that the Pyrenees Highway between Muckleford South and Newstead has a serious crash history requiring action through a safety improvement project.

The facts are (from VicRoads data) that 5 casualty crashes have occurred since 2009 from run-off road incidents resulting in 4 injury cases and one fatality. To me that does not represent a serious crash history in the last 7 years.

The safety works proposed are a combination of wire rope barriers, guard rails, shoulder sealing, reflective road markers and the removal of 143 trees. Bernard Slattery (representing FOBIF) and I (representing CFNC) attended an information session held in Newstead on March 3, 2016.

Detailed drawings were presented of all the works planned and the location of each tree proposed to be removed.

Location and Tree Identification

Most of the works proposed are in a 4.1 km section of the road between Symes Road and Mia Mia Road . Each tree to be removed is marked with a yellow spot on the edge of the road and is identified by size. (Large, medium, small), which side of the road, and distance from Newstead.

Trees proposed to be removed are :-

Small;	less than 52cm diameter at Breast Height	126
Medium;	between 52 and 70 cm	7
Large;	above 70 cm	10

On the drawings, each of the large trees was shown clearly but the medium and small trees were combined. It is clear that all of the medium and many of the small trees my have considerable environmental and aesthetic value.

VicRoads Policy

The policy of the organization with respect to safety is the same as it was 10 years ago "a clearing of 3 metres wide is required on each side of the road to enable a broken down vehicle to be parked completely clear of the roadway." Where a guard rail or wire rope barrier is used there should be a one metre clearance on the roadside and a 0.5 and 1.0 metre clearance respectively behind the barrier to allow for deflection when a vehicle makes contact with the barrier.

In discussion with VicRoads engineers we were told that there is now some flexibility in applying these specifications.

Hans and Bernard inspected and photographed the large trees. One could not be found. Of the others, many are to be removed to make way for the wire barriers. Along the Chewton-Elphinstone Road, several examples of flexibility may be seen. At the time, VicRoads would not consider a lower speed limit. Recently speed zones of 80kph have appeared on that stretch

Hans recommends that the committee should discuss the issue and decide whether to make a submission. Should this club get involved , or perhaps leave it to FOBIF if any action is to be taken. What do you, the members think ?

Observations January/February 2016

Geraldine Harris

2/2/16 - 4 New Holland Honeyeaters, 5 White-browed babbler, Eastern Yellow Robin, 1 Brown Treecreeper, 2 Willy Wagtails, 1 Eastern Rosella, 1 Eastern Spinebill, 5 White-plumed Honeyeaters, 4 Superb Fairy Wrens, 1 Grey Shrike-thrush, 2 White-browed Scrub-wren, immature Crimson Rosella at birdbath in garden at Barkers Creek. Also at birdbath this month - Crested Shrike-tits, Yellow-tufted Honeyeater and Yellow-faced Honeyeater, Common Bronzewing, Sacred Kingfisher, Willy Wagtail, Red Wattlebird White-breasted Cuckoo-shrike, Magpies, Choughs.

10/2/16 Soaring Wedge-tailed Eagle being harassed by another raptor, possibly our resident Collared Sparrowhawk.

Later the same day as I sat down with a coffee I noticed a skink moving along the window sill, a common occurrence in our house – BUT – then I realised it was instead a young half metre long brown snake on the INSIDE OF THE WINDOW SILL! Disposed of it with spade but also unfortunately later discovered that I had squashed a beautiful large Marbled Gecko in the process of checking under the toy baskets near where the snake had been.

11/2/16 Yellow-footed Antechinus scampering around near birdbath and then on rough bark of the Rose Sheoak (Allocasuarina torulosa) - feet belly and sides cream, prominent light eye rings and black tip to tail.

At Anglesea over February:

Southern Brown Bandicoot released from cat trap, Bush rat on wood stack and Rufous Bristlebird, Brush Bronzewing and Brown Quail regularly seen at birdbath in garden.

Annual Bird Count update

Kit Morris

Here are the numbers of our Annual Bird Count in December 2015 - a better result than the previous year's count. Thankyou to all who took part.

105 total species; 2086 total count

(2014 year results were 103 species and 1789 total count)

Special mentions spotted - Latham's Snipe, White backed Swallow, Southern Whiteface, Little Corella, White Fronted Chat.

As insufficient articles arrived I have had to fill the space with some ramblings on a topic of questionable relevance, though I had in mind that we will be undertaking a geology excursion this month. Please think about contributing or we may not be able to continue the newsletter. Cost is considerable for postage now, so we would like to know if you are willing to receive your e-copy by email. If so email me or the Secretary so we can make a list.
Please note also the deadline for articles for May is April 30 - Ed

Please check that you have paid your subscription - there are several overdue

Feathered Five Festival - March 19 & 20

Geraldine Harris

A number of members participated in the Feathered Five Festival which included a choice of morning bird walks at Glenluce, Clydesdale, and Nuggetty on the Saturday followed by a meal and information evening, and bird walk on Sunday at Strangways.

On Saturday our small group at Nuggetty, ably led by Jane and Kerri, set out undeterred by the persistent misty rain. With the help of a couple of seasoned birdwatchers and the enthusiasm of the rest of the group we managed a reasonable tally at the first location.

At our second stop further north alongside Kerri's property in the Bradford Hills and Blue Hills area we decided to do a 20-minute survey along a designated area. The highlights of this walk were, for some, a first look at a Crested Shrike-tit and clear sightings of both male and female Hooded Robins that posed for long periods in branches at eye hight. By the end of the morning we had a good list of woodland birds including three of the target species: Brown Treecreeper, Jacky Winter, and Hooded Robin.

I was unable to attend the evening activities but joined the large combined group of Festival and FOBIF people who visited the lovely Skeoch Property on Sunday morning. We split into three groups and at the end of the morning our group had a good list of bird sightings (see below) but alas no Diamond Firetail or Painted Button-quail to complete the targeted five species. We had however seen a Yellow-footed Antechinus, a koala and an echidna.

Before we went home some of us went with Andrew to see some of his sound recording equipment in action (including a microphone with "the best pre-amps in the world") and we each had a turn listening to bird calls around us through the headphones. This was a real treat – at first it seemed a bit noisy, such was the sensitivity of the equipment, but, after a minute or two of adjusting, the clarity of individual calls coming in from different locations was truly amazing.

Bird List (Asha's Group)

Brown Tree-creeper, Varied Sittella, Grey Fantail, Yellow-tufted Honeyeater, White-naped Honeyeater, White-throated Tree-creeper, Eastern Spinebill, Red Wattlebird, Fuscous Honeyeater, Grey Shrike-thrush, Spotted Pardalote, Yellow-faced Honeyeater, Eastern Yellow Robin, Weebill, Rufous Whistler, Striated Pardalote, Fantailed Cuckoo, White-browed Babbler, White-eared Honeyeater, Scarlet Robin, Jacky Winter, Black-faced Cuckoo-shrike, Wedge-tailed Eagles, Yellow-rumped Thornbill

Disclaimer: The opinions expressed in this newsletter are those of the contributors and not necessarily those of the club

Castlemaine Field Naturalists
Coming events

Fri April 8 meeting: speaker to be confirmed

Sat April 9 field trip: Upper Coliban Reservoir glacial geology, leader Julian Hollis

Fri May 13 meeting: speaker CAROL HALL: New England and beyond - an ice age legacy

VISITORS ARE WELCOME AT CLUB ACTIVITIES

General meetings - (second Friday of each month, except January) are held in the Uniting Church (UCA) Hall (enter from Lyttleton St.) at 7.30 pm.

Field Trips - (Saturday following the general meeting) leave from the car park opposite Castle Motel, Duke Street at 1.30pm sharp unless stated otherwise. BYO morning and/or afternoon tea. Outdoor excursions are likely to be cancelled in extreme weather conditions. There are NO excursions on total fire ban days.

Business meetings - third Thursday of each month, except December, at George Broadways; 24a Greenhill Ave., at 6.00 pm. Members are invited to attend.

Club website (Web master: Chris Timewell) - http://castlemainefnc.wordpress.com/

Subscriptions for 2016
Ordinary membership: Single $30, Family $40
Pensioner or student: Single $25, Family $30
Subscription includes postage of the monthly newsletter, Castlemaine Naturalist

2016 Committee

President:	Nigel Harland		5474 8246
Secretary:	George Broadway	georgebroadway@bigpond.com	5472 2513
Treasurer:	Geoff Harris		

Geraldine Harris	5474 2244	Richard Piesse	0448 572 867
Peter Turner	5470 6891	Noel Young (Editor)	5472 1345

[email newsletter material to: **noel.young@optusnet.com.au**]

Castlemaine Field Naturalists Club Inc. PO Box 324, Castlemaine, 3450.
Inc #A0003010B